

ABSTRACT OF THE DISCLOSURE

A film structure includes low-k dielectric films and N-H base source films such as barrier layer films, etch-stop films and hardmask films. Interposed between the low-k dielectric film and adjacent N-H base film is a TEOS oxide film which suppresses the
5 diffusion of amines or other N-H bases from the N-H base source film to the low-k dielectric film. The film structure may be patterned using DUV lithography and a chemically amplified photoresist since there are no base groups present in the low-k dielectric films to neutralize the acid catalysts in the chemically amplified photoresist.

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